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REMARKS

This amendment is intended as a full and complete response to the non-final Office Action mailed January 20, 2004. In the Office Action, the Examiner notes that claims 1-24 are pending, of which claims 1-24 are rejected. By this amendment claims 10-18 are cancelled, and claims 1-9 and 19-24 continue unamended.

In view of both the amendments presented above and the following discussion, Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, Applicants believe that all of these claims are now in allowable form.

Objections

The Examiner has objected to claim 13 as being dependent upon itself. Applicants have cancelled claim 13. Therefore, the objection is now considered moot. Applicants respectfully request that the Examiner's objection be withdrawn.

Rejection under 35 U.S.C. §103

A. Claims 1-6, 10-15 and 19-21

The Examiner has rejected claims 1-6, 10-15 and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Ueno et al. (US006438596B1, hereinafter "Ueno") in view of Hokanson (US006094680A, hereinafter "Hokanson"). Applicants respectfully traverse the rejection.

Applicants' independent claims 1 and 19 recite:

"1. In an interactive information distribution system including a network of provider equipment and subscriber equipment, apparatus comprising:
a plurality of servers coupled to respective subscriber equipment,
each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets; and

a manager, coupled to each of said plurality of servers for routing video assets between said servers in response to video asset requests, and for migrating video assets between storage partitions in response to a video asset request rate traversing a threshold rate." (emphasis added)

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"19. In an interactive information distribution system comprising a plurality of servers coupled to respective subscriber equipment, each of said servers having a primary storage partition for storing a first portion of video assets and a secondary storage partition for storing at least some of a remaining portion of said video assets, said servers providing video assets to respective subscriber equipment in response to subscriber requests, a method comprising the steps of:

determining an asset request rate for each of said video assets stored in each server;

comparing said determined asset request rates with respective threshold rates; and

in the case of video assets stored on a secondary partition having a request rate exceeding said respective threshold rate, migrating said video assets stored on said secondary storage partition to a corresponding primary storage partition." (emphasis added)

The test under 35 U.S.C. §103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather, the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 U.S.P.Q. 1021, 1024 (Fed. Cir. 1984) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. In re Wright, 6 U.S.P.Q. 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). The combination of Ueno and Hokanson fails to teach or suggest Applicants' invention as a whole.

In particular, the Ueno reference discloses

"A video on demand system includes one or more hybrid fiber coax access networks connecting set top units to corresponding head end units. The head end unit for an access network is connected to an asynchronous transfer mode wide area network (ATM WAN). A hierarchical system of video servers, including at least one center server and at least one local server, or cache node, are also connected to the ATM WAN. When a user wishes to select a video, a service control unit coupled to the ATM WAN generates a selection list of proposed videos for which server and network resources are available to immediately serve the user-selected video." (See Ueno, Abstract).

However, the Ueno reference fails to teach, or even suggest,

"a plurality of servers coupled to respective subscriber equipment, each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets."

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Furthermore, the Hokanson reference fails to bridge the substantial gap as between the Ueno reference and the Applicants' invention. In particular, the Hokanson reference discloses:

"The database server is configured to store the video content in a storage hierarchy in which content rated at a higher hierarchical level can be made available to comparatively more clients and content rated at a lower hierarchical level can be made available to comparatively fewer clients. This storage hierarchy might be implemented as a collection of heterogeneous storage devices having different associated performance and costs, or as a homogenous array of storage devices wherein the hierarchy is formed by replicating copies of higher rated content.

The database server is configured to manage the content within the storage hierarchy according to a cost/availability criteria. In this manner, content is optimally organized at various hierarchical levels within the storage hierarchy which facilitates acceptable availability to users, while constraining costs for keeping and supplying the content. As certain video content is requested more regularly in comparison to another content, the highly requested content might be moved to higher hierarchical level (e.g., higher performing device, or replicated) while the less requested content might be moved to lower hierarchical level (e.g., lower performing device, or removal of any additional copies) if the cost/availability criteria indicates that the system will run more effectively for user demand without increasing costs." (See Hokanson, column 3, lines 7-31).

Nowhere in the Hokanson reference is there any teaching or suggestion of

"each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets."

Even if the two references could somehow be operably combined, the references would merely disclose a centralized database server in which content rated at a higher hierachal level can be made available to comparatively more clients and content rate at a lower hierachal level can be made available to comparatively fewer clients. The teachings of the Ueno and Hokanson references are completely different from the Applicants' invention. In particular, the Applicants' invention provides a decentralized server network where "the infrequently requested video assets are divided (decentralized) amongst each of the plurality of head-ends and then stored on their respective secondary storage partitions." That is, the Applicants' invention provides "a plurality of servers coupled to respective subscriber equipment, each of said

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servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets." Nowhere in the cited references, either singly or in combination, is there any teaching or suggestion that each of the servers in the interactive information distribution system includes both a primary storage partition and a secondary storage partition, where the primary storage partition stores a first portion of video assets (such as frequently requested video assets) and the secondary storage partition stores a remaining portion of video assets (such as infrequently requested video assets). Therefore, the Ueno and Hokanson references fail to teach or suggest the Applicants' invention as a whole.

Furthermore, the combined references fail to embrace the problems that Applicants' invention solves. In particular, the Applicants' invention solves the problem of allowing maximum access to the video titles with minimum network cost associated with their delivery. The Applicants' invention solves this problem by providing a decentralized network that includes both primary and secondary storage devices at each of the head ends such that

"The primary storage partition 218 on the primary storage device 216 at each head-end 210 is used to store frequently requested video assets and temporarily cached library video assets. Each primary storage partition 218, at each head-end 210 typically has the same frequently requested video assets as any other head-end 210.

The secondary storage partition 219 is used to store portions of the infrequently requested video assets. An entire library of infrequently requested video assets is divided and stored amongst the plurality of head-ends 210 at each of the secondary storage partitions 219 on their respective primary storage devices 216.

An infrequently requested video asset is typically stored on the secondary storage partition 219 at a single head-end 210. However, the request rate for that video asset may warrant additional storage at other head-ends 210. As such, the content may be replicated and stored thereafter. In this manner, video assets that do not warrant storage across the entire system of head-ends 210 in the interactive Information distribution system 200, may still be dynamically stored at multiple head-ends 210. Such dynamic storage corresponding to those neighborhoods having higher request rates than others is made in accordance with an algorithm that allows maximum access to the video titles with minimum network cost associated with their delivery."

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By contrast, both the Ueno and Hokanson references teach a distribution network having a centralized storage system for providing various video assets. As noted above, the Applicants' invention provides dynamic storage corresponding to those neighborhoods having higher request rates than others, such that maximum access to the video titles with minimum network costs associated with their delivery can be provided. Therefore, the combined references fail to solve the problem of distributing video assets in the manner that the Applicants' invention does, and consequently the combined references fail to teach or suggest the Applicants' invention as a whole.

As such, Applicants submit that independent claims 1 and 19 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the rejection be withdrawn. Furthermore, claims 2-6, and 20-21 depend directly or indirectly from, respectively, independent claims 1, 10 and 19 and recite similar features thereof. As such, and at least for the same reasons as discussed above, Applicants submit that claims 2-6 and 20-21 are also not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the rejections be withdrawn.

B. Claims 7-9, 16-18 and 24

The Examiner has rejected claims 7-9 and 24 as being unpatentable over Ueno and Hokanson as applied to claims 6 and 23 above, and further in view of Kikinis (US006163795A, hereinafter "Kikinis"). Applicants respectfully traverse the rejection.

For the reasons set forth above, Applicant submits that independent claims 1 and 19 are not obvious in view of the combination of Ueno and Hokanson. Claims 7-9 and 24 depend directly or indirectly from, respectively, independent claims 1, 10 and 19 and recite additional features thereof. As such, and for at least the same reasons as discussed above, Applicants submit that dependent claims 7-9 and 24 are also not obvious in view of the combination of Ueno and Hokanson.

Furthermore, Kikinis fails to teach or even suggest "each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers

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having a secondary storage partition for storing at least some of a remaining portion of said video assets." Furthermore the Kikinis reference fails to bridge the substantial gap as between the Ueno and Hokanson references and the Applicants' invention. In particular, Kikinis merely discloses:

"Clients can monitor their service as often as they like for newly available video in the areas of interest they have indicated, and can then select clippings they wish to see. When a client selects one or more clippings, the video data is sent to the client on the interconnecting link to the server in a compressed mode, and the client can either store or immediately view the data sent.

FIG. 1B is a diagram showing file server 1 in additional detail, and, by example, the architecture of all other file servers in the global architecture. A CPU 2 and a random-access memory (RAM) are connected to an internal bus 18, which also connects to network ports 10 and 30 that couple file server 1 with other file servers on the network."

However, nowhere in the combined references is there any teaching or suggestion of:

"a plurality of servers coupled to respective subscriber equipment, each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets."

Therefore, the combination of Ueno, Hokanson, and Kikinis fails to teach or suggest the Applicants' invention as a whole.

As such, Applicants submit that claims 7-9 and 24 are not obvious and fully satisfy the requirements of 35 U.S.C. §103. Therefore, Applicants respectfully request that the rejection be withdrawn.

C. Claim 21

The Examiner has rejected claim 21 as being unpatentable over Ueno and Hokanson as applied to claim 19 above, and further in view of Kenner (US006269394B1, hereinafter "Kenner"). Applicants respectfully traverse the rejection.

For the reasons set forth above, Applicants submit that independent claim 19 is not obvious in view of the combination of Ueno and Hokanson. Claims 21 depends from Independent claim 19 and recites additional features thereof. As such, and for at

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least the same reasons as discussed above, Applicants submit that dependent claim 21 is also not obvious in view of the combination of Ueno and Hokanson.

Furthermore the Kenner reference fails to bridge the substantial gap as between the Ueno and Hokanson references and the Applicants' invention. In particular, the Kenner reference merely discloses deleting out of date or unnecessary duplicated data from a storage device (see Kenner, column 12, lines 35-40). However, nowhere in the Kenner reference is there any teaching or suggestion of:

"each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets."

Furthermore, even if the three references could somehow be operably combined, the combination would merely disclose a centralized database server in which content rated at a higher hierachal level can be made available to comparatively more clients and content rate at a lower hierachal level can be made available to comparatively fewer clients. The teachings of the Ueno, Hokanson and Kenner references are completely different from the Applicants' invention.

In particular, the Applicants' invention provides a decentralized server network where "the infrequently requested video assets are divided (decentralized) amongst each of the plurality of head-ends and then stored on their respective secondary storage partitions." That is, the Applicants' invention provides "a plurality of servers coupled to respective subscriber equipment, each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage partition for storing at least some of a remaining portion of said video assets." Nowhere in the cited references, either singly or in combination, is there any teaching or suggestion that each of the servers in the interactive information distribution system includes both a primary storage partition and a secondary storage partition, where the primary storage partition stores a first portion of video assets (such as frequently requested video assets) and the secondary storage partition stores a remaining portion of video assets (such as infrequently requested video assets). Therefore, the Ueno, Hokanson and Kenner references fail to teach or suggest the Applicants' invention as a whole.

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As such, Applicants submit that claim 21 is not obvious and fully satisfies the requirements of 35 U.S.C. §103. Therefore, Applicants respectfully request that the rejection be withdrawn.

CONCLUSION

Thus, Applicants submit that none of the claims, presently in the application, is anticipated or obvious under the respective provisions of 35 U.S.C. §102 or §103. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall, Esq. or Steven M. Hertzberg, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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